

CON'T -!!Former Compuserve Users Alert!!- I wrote a letter to them in September 1989, and have yet to hear from them. I checked with my VISA card bank, and there is little I can do to block this \$1.50 a month charge by Compuserve. I could spent \$10 a month to put the number on the warning list, boy that would save me money. I can block a specific account, but that has to be for \$50 or more, and the Compuserve charge will slide under the block. I can change numbers, but even then the charge will NOT be stopped, as the old account number is still active until the end of the year. - IF YOU are a FORMER user of Compuserve, check your charge cards, you maybe still paying for it. How does one QUIT compuserve? If you are going to change card numbers as I did, do it BEFORE the end of this year, else the account will be active and you liable for all charges under \$50...for the rest of 1990! Act now, unless you like paying for what you don't use.

-UPDATE- The letter I wrote in mid-September might be working! The billing usually made towards the end of the month did not show up on the September charges, and Online has yet to show up in my mail. Well it has been an education for me and I hope others benefit, both about Compuserve and the charge card.

CON'T SNUG- Indiana TSUG has virtually taken over the operations of SNUG- their Jul/Aug 89 issue is devoted to SNUG's situation and who is doing what. In a nut shell, SNUG prez, Mel Nathanson has temporarily stepped aside, leaving Paul Holmgren as the acting Prez, and Basil Wentworth as VP. Frank Davis is the SNUG PD librarian, and he, Basil and Paul are getting a SNUG newsletter out as soon as possible. All current dues have been extended 6 months. If you want info on the PD library send \$2, to Frank at 513 East Main, Peru, IN 46970- credits towards future purchase - allow several weeks to process. PLEASE use SASE when requesting info.

(SNUG's chances of survival are considerably better, one; all the elected officals are within shouting distance of each other. Two; the people in there have working knowledge of running a user group. Three; they have already done something, published this info, and are getting the library in shape. The problem facing them faces all user groups, declining enrollments and rising costs.)

-----Surviving Vendors-----

Russell Electronics, RD#1, Box 539, Centre Hall, PA 16828
 RMG, 1419 1/2 7th Street, Oregon City, OR 97045 (TS stuff galore)
 Bottle Cap Software, 1284 Brushwood Ave., Cincinnati, OH 45224
 Ed Gray, PO BOX 2186, Inglewood, CA 90305 (2068 hardware support)
 John McMichael, 1710 Palmer Dr., Laramie, WY 82070 (2068 software)

-----Repairs-2068-----

Dan Elliott, Route 1, Box 117, Cabool, MO 65689
 J. Matthewson, 1852 Appleford St., Gloucester, Ont. K1J 6T4

-----Vendors Con't-----

Eric Johnson, 249 N. Harden Ave., Orange City, FL

-----Magazines-----

Byte Power, 1748 Meadowview Ave., Pickering Ont., Canada L1V 3B8 (2068 Tap Magazine)

UPDATES, Bill Jones, 1317 Stratford Ave., Panama City, FL 32404

Time Designs, Tim Woods, 29722 Hult Rd., Colton, OR 97017

-----2068 Disc Drive Interfaces-----

Larken Electronics, RR #2, Navan, Ontario, Canada K4B 1H9

The John Olinger Co., 11601 Whidbey Dr., Cumberland, IN 46229

-Write for addition info, current items, and enclosing a SASE wouldn't hurt anybody's feelings any. Apologies to any 2068 vendor not on this list, let me know of omissions and I will gladly include them next time.

On the good news side, Larken's "MAXCOM" is getting a workout as the software of the Ottawa-Hull TSUG's BBS. I have been on it 3x now as a representative of SINCUS, and hope to maintain close ties with this group via the BBS. For those of you wishing to get on a new BBS, contact them at 8-N-1, currently

ZXB1/TS1000 Tips - by Don Lamen, SINCUS

16. Here is another OCTAL Input and List program. This one is based on Machine Code with BASIC support. "Why OCTAL?", You may ask. My reason for including it is due to the fact that the Z-80 microprocessor is an upgraded version of the 8080 microprocessor and like the 8080 the Z-80's instruction code is based on OCTAL code. When the instruction codes are written in OCTAL it is easier to see what is happening inside the microprocessor. By the way the 8080 has 78 different types of instruction codes (a total of 244 possible instruction codes). All of the instruction codes are not printed in the Timex 1000 Manual. I will give You the missing codes in the next Tip.

OCTAL

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1 REM 137' BLOCK of Machine Code. 120 INPUT A$
5 REM "OCTAL" 130 IF A$ = "" THEN GOTO 250
10 LET A = 16514 140 LET A$ = A$ + " "
20 PRINT "ADDRESS (DEC) "; 150 IF A$ <> 4 * INT (LEN A$ / 4) THEN GOTO 120
30 INPUT A$ 160 PRINT PEEK 16514 + 256 * PEEK 16515;" ";
40 PRINT A$,,, 170 RAND USR 16516
50 POKE A + 1, INT (VAL A$ / 256) 180 GOTO 120
60 POKE A, VAL A$ - 256 * INT 200 PRINT "OCTAL LIST"
(VAL A$ / 256) 210 GOSUB 10
70 CLEAR 220 RAND USR 16609
80 RETURN 250 PRINT
100 PRINT "OCTAL WRITE" 260 PRINT "DONE"
110 GOSUB 10

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MACHINE CODE:

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( 16514 ) 4082 0000 MCV-1: ADDR
                                2 bytes
( 16516 ) 4084 2A1040 O-WRITE: LD HL, ( VARS )
                                INC HL
                                46 LD B, (HL) ; count
                                CB38 SRL B
                                CB38 SRL B
                                23 INC HL
408E C5 NEXT: PUSH BC
                                23 INC HL
4090 7E 1st Digit: LD A, (HL) ; Oct Hi
                                FE20 CP 20 ; 4 dec.
                                3049 JR NC, REPORT B
                                23 INC HL
                                E5 PUSH HL ; Save Pntr.
                                CD1B15 CALL 151B, STK-A (-2)
                                3E40 LD A, 40 ; 64 dec.
                                CD1D15 CALL 151D, STACK-A
                                E1 POP HL
40A0 7E 2nd Digit; LD A, (HL) ; Oct Mid
                                FE24 CP 24 ; 8 dec.
                                3039 JR NC, REPORT-B
                                23 INC HL
                                CD1B15 CALL 151B, STK-A (-2)
                                3E08 LD A, 08
                                CD1D15 CALL 151D, STACL-A
                                E1 POP HL
40B0 7E 3rd Digit: LD A, (HL)
                                FE24 CP 24 ; 8 dec.
                                3029 JR NC, REPORT-B
                                23 INC HL

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E5          PUSH HL
CD1B15     CALL 151B, STK-A (-2)
40BA EF    CALCULATE: RST 28 ; Use Calculator
C1         DEFB: C1 ; Store-1
02        DEFB: 02 ; Delete Last Val
04        DEFB: 04 ; Multiply
C0        DEFB: C0 ; Store-0
02        DEFB: 02 ; Delete Last Val
04        DEFB: 04 ; Multiply
E0        DEFB: E0 ; Recall-0
0F        DEFB: 0F ; Add
E1        DEFB: E1 ; Recall-1
0F        DEFB: 0F ; Add
34        DEFB: 34 ; End Calculating
40C6 CDCD15 GET-VAL: CALL 15CD, FP-T0-A
4F        LD C,A ; Save A in C
E1        POP HL
AF        XOR A
BE        CP (HL)
200F     JR NZ, REPORT-B
79        LD A, C ; Recover A
ED5B8240 LD DE, (ADDR)
12        LD (DE), A
13        INC DE
ED538240 LD (ADDR), DE
C1        POP BC
40DB 10B1  END-CK: DJNZ NEXT
C9        RET
40DE C1    REPORT-B: POP BC
CF0A     RST 0B DEFB: 0A ;REPORT-B
                                     93 bytes
( 16609 ) 40E1 2A8240 O-PRINT: LD HL, (ADDR)
7E        LD A, (HL)
F5        PUSH AF ; Save A
E6C0     AND C0 ; Mask bits 0-5
0606     LD B, 06
40EA 1F    LOOP-1: RRA ; Position bits 6-7
10FD     DJNZ LOOP-1
C61C     ADD 1C ; 2B dec.
D7        RST 10 ; Print A
F1        POP AF
F5        PUSH AF
E638     AND 38 ; Mask bits 0,1,2,6,7
0603     LD B, 03
40F6 1F    LOOP-2: RRA ; Position bits 3,4,5
10FD     DJNZ LOOP-2
C61C     ADD 1C ; 2B dec.
D7        RST 10 ; Print A
F1        POP AF
E607     AND 07 ; Mask bits 3-7
C61C     ADD 1C ; 2B dec.
D7        RST 10 ; Print A
    
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Listing Con't page 13.

The following is the third part of a four part catalog of the Spectrum and TS2068 ROMs comes to you through the efforts of:

Ray Byler, June 1988, Fort Riley, Kansas

SPECTRUM ROM ENTRY POINTS INDEXED BY ADDRESS

RESTART ROUTINES & TABLES

HEX	DEC	SPECTRUM NAME	HEX	DEC	TS2068 NAME
0000	00000	START	0000	00000	PLUGIN
0008	00008	ERROR-1	0008	00008	(Print Error)
0010	00016	PRINT-A-1	0010	00016	WRCH
0018	00024	GET-CHAR	0018	00024	(Get Character)
001C	00028	TEST-CHAR	001C	00028	(Tst Character)
0020	00032	NEXT-CHAR	0020	00032	(Get Nxt Char)
0028	00040	FP-CALC	0028	00040	(FP Calculator)
0030	00048	BC-SPACES	0030	00048	(BC Workspaces)
0038	00056	MASK-INT	0038	00056	(Maskable Int)
0048	00072	KEY-INT	0048	00072	(Keyboard Int)
004F	00079	(Pop HL & AF)	004F	00079	PHLAF
0053	00083	ERROR-2	0053	00083	(Error-2)
0055	00085	ERROR-3	0055	00085	LE3
0066	00102	RESET	0066	00102	(NMI Ext Int)
0074	00116	CH-ADD+1	0074	00116	NEXTCH
0077	00119	TEMP-PTR1	0077	00119	NC_HL
0078	00120	TEMP-PTR2	0078	00120	TC_HL
007D	00125	SKIP-OVER	007D	00125	(Control Chrs)
0095	00149	(Token Table)	0098	00152	TOKENS
0205	00517	(Key Tables)	0227	00551	KSCAN
022C	00556	(Ex Mode Ltrs)	0268	00616	(Ex Mode Ltrs)

KEYBOARD ROUTINES

HEX	DEC	SPECTRUM NAME	HEX	DEC	TS2068 NAME
028E	00654	KEY-SCAN	02B0	00688	K_SCAN
0296	00662	KEY-LINE	02B8	00696	(Scanning Loop)
02BF	00703	KEYBOARD	02E1	00737	UPD_K
02F1	00753	K-NEW	0317	00791	(New Key)
0310	00784	K-REPEAT	0336	00822	(Key Repeat Fn)
031E	00798	K-TEST	035C	00860	K_BASE
0333	00819	K-DECODE	0371	00881	CHCODE

LOUDSPEAKER ROUTINES

HEX	DEC	SPECTRUM NAME	HEX	DEC	TS2068 NAME
03B5	00949	BEEPER	03F3	01011	PARP
03F8	01016	BEEP	0436	01078	BEEP
046C	01132	REPORT-B	04AA	01194	(Report B)
046E	01134	(Tone Table)	04AC	01196	(Tone Table)

CASSETTE HANDLING ROUTINES

HEX	DEC	SPECTRUM NAME	HEX	DEC	TS2068 NAME
04C2	01218	SA-BYTES	X068	X0104	W_TAPE
053F	01343	SA/LD-RET	X0E5	X0229	W_BORD
0556	01366	LD-BYTES	X0FC	X0252	R_TAPE
05E3	01507	LD-EDGE-2	X189	X0393	RD_BIT
05E7	01511	LD-EDGE-1	X18D	X0397	R_EDGE
0605	01541	SAVE-ETC	X1AB	X0427	SLVM
07CB	01995	VR-CONTROL	X58F	X1423	(Verify Command
0802	02050	LD-BLOCK	X5C6	X1478	(Ld Data Block)
0808	02056	LD-CONTRL	X5CC	X1484	LOAD
08B6	02230	ME-CONTRL	X6E5	X1765	MERGE
0970	02416	SA-CONTRL	X851	X2129	SAVE
09A1	02465	(Cassette Msgs)	3C89	15497	SEPRMT
09C1	02497	(Program: msg)	3CA9	15529	LDMES

SCREEN & PRINTER HANDLING ROUTINES

09F4	02548	PRINT-OUT	0500	01280	SENDTV
0A11	02577	(Ctrl Char Tbl)	0528	01320	(Ctrl Char Tbl)
0A23	02595	PD-BACK1	053A	01338	P_LFT
0A3D	02621	PD-RIGHT	0554	01364	P_RT
0A4F	02639	PD-ENTER	0566	01382	P_NL
0A5F	02655	PD-COMMA	0576	01398	(Print Comma)
0A69	02665	PD-QUEST	0580	01408	(Print a "?")
0A6D	02669	PD-TV-2	0584	01412	(Ink - Over)
0A9B	02715	(AT Ctrl Char)	05B2	01458	SET_AT
0AD9	02777	PD-ABLE	05F0	01520	(Print Chars)
0ADC	02780	PD-STORE	05F3	01523	STTVCU
0AF0	02800	PD-ST-E	0607	01543	(Save Lwr Scrn)
0AFC	02812	PD-ST-PR	0613	01555	(Save Prnt Bfr)
0B03	02819	PD-FETCH	061A	01562	LDTVCU
0B1D	02845	PD-F-PR	0634	01588	(P-Bfr Fetch)
0B24	02852	PD-ANY	063B	01595	(Print Chars)
0B65	02917	PD-CHAR	069A	01690	(Expand Chars)
0B7F	02943	PR-ALL	06B4	01716	(Print a Char)
0BD3	03027	PD-ALL-6	0708	01800	(Adjst fr Prtr)
0BDB	03035	PD-ATTR	0710	01808	ATTBYT
0C0A	03082	PD-MSG	073F	01855	PUTMES
0C3B	03131	PD-SAVE	0776	01910	PR_TV2
0C41	03137	PD-SEARCH	077C	01916	(Search Table)
0C55	03157	PD-SCR	0790	01936	TVFUL?
0C86	03206	REPORT-5	07C1	01985	ERR5
0CF8	03320	(Scroll? Msg)	0833	02099	(Scroll? Msg)
0D4D	03405	TEMPS	0888	02184	R_ATT5
0D6B	03435	CLS	08A6	02214	K_CLS
0D6E	03438	CLS-LOWER	08A9	02217	CLLHS
0DAF	03503	CL-ALL	08EA	02282	CLS
0DD9	03545	CL-SET	0914	02324	SETCUR
0DD9	03545	CL-SET	0914	02324	SETTVC
0DFE	03582	CL-SC-ALL	0939	02361	SCRL
0E44	03652	CL-LINE	097F	02431	CLS_B

HEX	DEC	SPECTRUM NAME	HEX	DEC	TS2068 NAME
0E8B	03720	CL-ATTR	09C3	02499	(Cl Attributes)
0E9B	03739	CL-ADDR	09D6	02518	(Get DF Address)
0EAC	03756	COPY	0A02	02562	K_DUMP
0ECD	03789	COPY-BUFF	0A23	02595	DUMPPR
0EDF	03807	CLEAR-PRB	0A35	02613	CLPR
0EF4	03828	COPY-LINE	0A4A	02634	PRSCAN
0F2C	03884	EDITOR	0A82	02690	EDIT_K
0F81	03969	ADD-CHAR	0AE7	02791	INSA
0FA0	04000	(Edit Keys Tbl)	0B06	02822	(Edit Keys Tbl)
0FA9	04009	ED-EDIT	0B0F	02831	(Do Edit)
0FF3	04083	ED-DOWN	0B59	02905	(Cursor Down)
1007	04103	ED-LEFT	0B6D	02925	(Cursor Left)
100C	04108	ED-RIGHT	0B72	02930	(Cursor Right)
1015	04117	ED-DELETE	0B7B	02939	DELSYM
101E	04126	ED-IGNORE	0B84	02948	(End Edit)
1024	04132	ED-ENTER	0B8A	02954	(Restre ERR-SP)
1031	04145	ED-EDGE	0B97	02967	(Put Cursor)
1059	04185	ED-UP	0BBF	03007	(Cursor Up)
1076	04214	ED-SYMBOL	0BD7	03031	(Sym & Grph Cd)
107F	04223	ED-ERROR	0BE5	03045	(Edit Error)
1097	04247	CLEAR-SP	0BFD	03069	DEL_K
10AB	04264	KEY-INPUT	0C0E	03086	IN_K
111D	04381	ED-COPY	0C83	03203	ECHO
1190	04496	SET-HL	0CF6	03318	(Loc Wrk Space)
11A7	04519	REMOVE-FP	0D0D	03341	DESLUG

EXECUTIVE ROUTINES

HEX	DEC	SPECTRUM NAME	HEX	DEC	TS2068 NAME
11B7	04535	NEW	0D1D	03357	K_NEW
11CB	04555	START/NEW	0D31	03377	INIT
11DA	04570	RAM-CHECK	0D40	03392	(Check Memory)
1219	04633	RAM-SET	0D7F	03455	NEW
12A2	04770	MAIN-EXEC	0E28	03624	(Edit Mode Lp)
12A9	04777	MAIN-1	0E2F	03631	LED18
1303	04867	MAIN-4	0E8D	03725	LED4
1391	05009	(Report Msgs)	0F65	03941	RPTMSG
155D	05469	MAIN-ADD	1158	04440	(Add BASIC Line)
15AF	05551	(Init Chan Info)	11AA	04522	CHINIT
15C4	05572	REPORT-J	11BF	04543	(Invid I/O Dev)
15C6	05574	(Init Strm Data)	11C1	04545	SMINIT
15C9	05577	(Sinclair Logo)	1118	04376	(Timex Logo)
15D4	05588	WAIT-KEY	11CF	04559	RDCH
15D4	05588	WAIT-KEY	X8AA	X2218	AKEY
15E6	05606	INPUT-AD	11E1	04577	INCH
15EF	05615	OUT-CODE	11EA	04586	PUTDIG
15F2	05618	PRINT-A-2	11ED	04589	SENDCH
1601	05633	CHAN-OPEN	1230	04656	SELECT
160E	05646	REPORT-O	123D	04669	ERRO
1615	05653	CHAN-FLAG	1248	04680	SEL_HL
162D	05677	(Chan Code Tbl)	1293	04755	(Channel Flags)
19FB	06651	E-LINE-NO	1768	05992	LINENO
1A1B	06683	OUT-NUM-1	1788	06024	PUT_BC
1A28	06696	OUT-NUM-2	1795	06037	PUT_LN

HEX	DEC	SPECTRUM NAME	HEX	DEC	TS2068 NAME
1634	05684	CHAN-K	129A	04762	(Set K Flags)
1642	05698	CHAN-S	12AB	04776	(Set S Flags)
164D	05709	CHAN-P	12B3	04787	(Set P Flags)
1652	05714	ONE-SPACE	12BB	04792	INS1
1655	05717	MAKE-ROOM	12BB	04795	INSERT
1664	05732	POINTERS	12CA	04810	REMGSZ
168F	05775	LINE-ZERO	131E	04894	(Find Line No.)
1695	05781	LINE-NO	1324	04900	GET_LN
169E	05790	RESERVE	132D	04909	LCU2
16B0	05808	SET-MIN	133F	04927	CLEL
16BF	05823	SET-WORK	134E	04942	X_CALC
16C5	05829	SET-STK	1354	04948	RESET
16D4	05844	REC-EDIT	1363	04963	X_T_HL
16DC	05852	INDEXER	136B	04971	SEARCH
16E5	05861	CLOSE	139F	05023	CLOSE
16EB	05867	(Make Strm Dt=0	13AB	05032	RSTSTR
1701	05889	CLOSE-2	13BE	05054	CLCHAN
1716	05910	(Clse Strm Tbl)	1407	05127	(Clse Strm Tbl)
171C	05916	CLOSE-STR	140D	05133	(Close Strm Sub
171E	05918	STR-DATA	140F	05135	(Test Strm No.)
1736	05942	OPEN	142A	05162	OPEN
175D	05981	OPEN-2	1465	05221	OPCHAN
177A	06010	(Opn Strm Tbl)	14C7	05319	(Opn Strm Tbl)
1781	06017	OPEN-K	14CE	05326	(Open K Strm)
1785	06021	OPEN-S	14D2	05330	(Open S Stream)
1789	06025	OPEN-P	14D6	05334	(Open P Stream)
1793	06035	CAT-ETC.	25CB	09672	CAT
1793	06035	CAT-ETC.	25CC	09676	FORMAT
1793	06035	CAT-ETC.	25D0	09680	MOVE
1793	06035	CAT-ETC.	25D4	09684	ERASE
1795	06037	AUTO-LIST	14E1	05345	LIST
17F5	06133	LLIST	1541	05441	K_LLST
17F9	06137	LIST	1545	05445	K_LIST
1855	06229	OUT-LINE	15A1	05537	PUT_SR
1860	06240	(LD D,0)	15AC	05548	LPO
187D	06269	OUT-LINE2	15C9	05577	PUT
18B6	06326	NUMBER	1602	05634	(Skip Over No.)
18C1	06337	OUT-FLASH	160D	05645	FLASHA
18E1	06369	OUT-CURS	162D	05677	PR_CUR
190F	06415	LN-FETCH	165B	05723	NEXT_L
191C	06428	LN-STORE	1668	05736	DE_HL
1925	06437	OUT-SP-2	1671	05745	(Prnt Char/Tkn)
192A	06442	OUT-SP-NO	1676	05750	(Add Spaces/No)
1937	06455	OUT-CHAR	1683	05763	(Print Line)
196E	06510	LINE-ADDR	16D6	05846	FIND_L
1980	06528	CP-LINES	16E8	05864	CP_BC
1988	06536	(Fnd Stmt Sub)	16F0	05872	SUBLIN
198B	06539	EACH-STMT	16F3	05875	SUBLN1
1988	06584	NEXT-ONE	1720	05920	RECLN
19DD	06621	DIFFER	1745	05957	(Dif of Length)
19E5	06629	RECLAIM-1	174D	05965	DEL_DE
19E8	06632	RECLAIM-2	1750	05968	DELREC

BASIC LINE & COMMAND INTERPRETATION

HEX	DEC	SPECTRUM NAME	HEX	DEC	TS206B NAME
1A48	06728	(Cmd Offsets)	1945	06469	(Cmd Offsets)
1ADF	06879	P-SAVE	19E0	06624	TEMP3B
1AE0	06880	P-LOAD	19E1	06625	TEMP39
1B17	06935	LINE-SCAN	1A27	06695	SYNTAX
1B28	06952	STMT-LOOP	1A44	06724	LS4
1B52	06994	SCAN-LOOP	1A95	06805	(Get Cmd Class)
1B6F	07023	SEPARATOR	1AB2	06834	(Chk for Sprtr)
1B76	07030	STMT-RET	1AB9	06841	ENDSTT
1B8A	07050	LINE-RUN	1AD8	06872	EXECUTE
1B9E	07070	LINE-NEW	1AEC	06892	(Fnd Adrs Newln)
1BB2	07090	REM	1B00	06912	(Rem Command)
1BB3	07091	LINE-END	1B09	06921	(Ftch Add Nxtln)
1BBF	07103	LINE-USE	1B15	06933	(Fnd # Newline)
1BD1	07121	NEXT-LINE	1B27	06951	(Set Nxtln use)
1BEE	07150	CHECK-END	1B44	06980	END?
1BF4	07156	STMT-NEXT	1B4A	06986	ENDTEM
1C01	07169	(Cmd Class Tbl)	1B64	07012	(Cmd Class Tbl)
1C0D	07181	CLASS-03	1B70	07024	(Class 3 Cmds)
1C16	07190	JUMP-C-R	1B79	07033	(Jmp to TADDR)
1C1F	07199	CLASS-01	1B82	07042	TEM1
1C2E	07214	REPORT-2	1B91	07057	ERR2
1C59	07257	VAL-FET-2	1B8C	07100	LT22
1C79	07279	NEXT-2NUM	1BDC	07132	DYADIC
1C82	07298	EXPT-1NUM	1BE5	07141	TEM6
1C8A	07306	REPORT-C	1BED	07149	SYNERR
1C8C	07308	EXPT-EXP	1BEF	07151	TEM10
1CDE	07390	FETCH-NUM	1C49	07241	OPTND
1CE6	07398	USE-ZERO	1C51	07249	STK_0
1CEE	07406	STOP	1C59	07257	STOP
1CF0	07408	IF	1C5B	07259	(If Command)
1D03	07427	FOR	1C78	07288	FOR
1D86	07558	LOOK-PROG	1D28	07464	SKIP
1DAB	07595	NEXT	1D55	07509	NEXT
1DEC	07660	READ-3	1D96	07574	(Read after 1st
1DED	07661	READ	1D97	07575	READ
1E27	07719	DATA	1E82	07810	DATA
1E42	07746	RESTORE	1E9D	07837	(Restore Comman
1E45	07749	REST-RUN	1ECA	07882	RESTBC
1E4F	07759	RANDOMIZE	1ED4	07892	RAND
1E5F	07775	CONTINUE	1EE4	07908	CONT
1E67	07783	GO-TO	1EF1	07921	JUMP
1E73	07795	GO-TO-2	1EFD	07933	GOTO_2
1E7A	07802	OUT	1F04	07940	(Out Command)
1E80	07808	POKE	1F0A	07946	(Poke Command)
1E94	07828	FIND-INT1	1F1E	07966	FIX_U1
1E99	07833	FIND-INT2	1F23	07971	FIX_U
28B2	10418	LOOK-VARS	2C70	11376	FIND_N
2996	10646	STK-VAR	2D54	11604	GET_EL
2A52	10834	SLICING	2E10	11792	SLICER
2AB2	10930	STK-STO-*	2E70	11888	PSHSTR
2AB6	10934	STK-STORE	2E74	11892	PAEDCB
2AFF	11007	LET	2EBD	11965	LET

HEX	DEC	SPECTRUM NAME	HEX	DEC	TS2068 NAME
2B59	11097	L-NUMERIC	2F17	12055	L_NUM
2BF1	11249	STK-FETCH	2FAF	12207	POPSTR
2C02	11266	DIM	2FC0	12224	DIM
2CBB	11400	ALPHANUM	3046	12358	ALNUM?
2CBD	11405	ALPHA	304B	12363	ALPHA?
2C9B	11419	DEC-TO-FP	3059	12377	STKUSN
2D1B	11547	NUMERIC	30D9	12505	DIGIT?
2D28	11560	STACK-A	30E6	12518	STK_A
2D2B	11563	STACK-BC	30E9	12521	STK_BC
2D3B	11579	INT-TO-FP	30F9	12537	ININT

ARITHMETIC ROUTINES

2D4F	11599	E-TO-FP	310D	12557	KEY
2D7F	11647	INT-FETCH	313D	12605	LDDE
2D8C	11660	P-INT-STO	314A	12618	STDE_U
2D8E	11662	INT-STORE	314C	12620	STDE_S
2DA2	11682	FP-TO-BC	3160	12640	FP2BC
2DD5	11733	FP-TO-A	3193	12691	FP2A
2DE3	11747	PRINT-FP	31A1	12705	OUTPUT
2F9B	12187	PREP-ADD	335A	13146	SUMS
2FBA	12218	FETCH-TWO	3379	13177	SUMSLD
2FDD	12253	SHIFT-FP	339C	13212	SHIFT
300F	12303	SUBTRACT	33CE	13262	SUB
3014	12308	ADDITION	33D3	13267	ADD
30A9	12457	HL=HL*DE	3468	13416	MULT
30CA	12490	MULTIPLY	3489	13449	TIMES
31AD	12717	REPORT-6	356C	13676	ERR6
31AF	12719	DIVISION	356E	13678	DIVIDE
3214	12820	TRUNCATE	35D3	13779	TRUNC
3297	12951	RE-STACK	3656	13910	FLOAT

FLOATING-POINT CALCULATOR

32C5	12997	STK-ZERO	3684	13956	CALC
335B	13147	CALCULATE	371A	14106	CTRO
33A9	13225	TEST-5-SP	3768	14184	ROOM?
33B4	13236	STACK-NUM	3773	14195	STK_M
33C0	13248	MOVE-FP	377F	14207	RAMND
3406	13318	LOC-MEM	37C5	14277	ARRAY
3449	13385	SERIES-06-ETC.	3808	14344	(Series Gen Sub
346E	13422	NEGATE	382D	14381	NEGATE
34A5	13477	(In Command)	3864	14436	(In Command)
4AC	13484	(Peek Command)	386B	14443	(Peek Command)
34E9	13545	TEST-ZERO	3904	14596	TEST0
350B	13579	FP-0/1	3926	14630	STBOOL

HEX	DEC	SPECTRUM NAME	HEX	DEC	TS2068 NAME
1E9F	07839	REPORT-B	1F29	07977	ERRB
1EA1	07841	RUN	1F2B	07979	(Run Command)
1EAC	07852	CLEAR	1F36	07990	CLEAR
1EAF	07855	CLEAR-RUN	1F39	07993	CLR_BC
1EED	07917	GO-SUB	1F99	08089	GO_SUB
1F05	07941	TEST-ROOM	1FBB	08123	CHK_SZ
1F15	07957	REPORT-4	1FCF	08143	ERR4
1F23	07971	RETURN	1FD4	08148	RETURN
1F3A	07994	PAUSE	1FEB	08171	PAUSE
1F54	08020	BREAK-KEY	2009	08201	BREAK?
1F60	08032	DEF-FN	201D	08221	DEF
1FC3	08131	UNSTACK-Z	214F	08527	SYNTWO
1FC9	08137	LPRINT	2155	08533	K_LPR
1FCD	08141	PRINT	2159	08537	K_FRIN
1FDF	08159	PRINT-2	217E	08574	P_SEQ
2048	08264	PR-ST-END	21E7	08679	TERM?
2070	08304	STR-ALTER	220F	08719	STRITO
2089	08329	INPUT	222B	08747	INPUT
20C1	08385	IN-ITEM-1	226B	08811	I_SEQ
21D4	08660	REPORT-H	237E	09086	ERRH
21D6	08662	IN-CHAN-K	2380	09088	NOTKB?
21E1	08673	CO-TEMP-1	238B	09099	(Tst fr Clr Cd)
21E2	08674	CO-TEMP-2	238C	09100	GR_COL
21F2	08690	CO-TEMP-3	239C	09116	(Test for Ink)
21FC	08700	CO-TEMP-4	23A6	09126	COLITM
2211	08721	CO-TEMP-5	23BB	09147	TV_COL
2234	08756	CO-TEMP-7	23DE	09182	COLOUR
2273	08819	CO-TEMP-C	241D	09245	HIFLSH
2294	08852	BORDER	243E	09278	BORDER
22AA	08874	PIXEL-ADD	2603	09731	SCRMBL
22CB	08907	POINT-SUB	2624	09764	F_PNT
22DC	08924	PLOT	2635	09781	PLOT
22E5	08933	PLOT-SUB	263E	09790	PLOTBC
2307	08967	STK-TO-BC	2660	09824	GET_XY
2314	08980	STK-TO-A	266D	09837	GET_A
2320	08992	CIRCLE	2679	09849	CIRCLE
2382	09090	DRAW	26DB	09947	DRAW
24B7	09399	DRAW-LINE	2810	10256	DRAW_L
24BA	09402	(Compare X&Y)	2813	10259	DRAWLN

EXPRESSION EVALUATION

24FB	09467	SCANNING	2854	10324	EXPRN
2530	09520	SYNTAX-Z	2889	10377	INTPT?
2535	09525	S-SCRN*-S	288E	10382	F_SCRN
2580	09600	S-ATTR-S	28D7	10455	F_ATTR
25AF	09647	S-U-PLUS	296D	10605	(Scanning Func)
25F8	09720	S-RND	29B6	10678	RND
2627	09767	S-PI	29E5	10725	F_PI
2634	09780	S-INKEY*	29F2	10738	F_INKY
26C9	09929	S-LETTER	2A87	10887	(Test Variable)
28AB	10411	FN-SKPOVR	2C69	11369	NXT_HL

HEX	DEC	SPECTRUM NAME	HEX	DEC	TS2068 NAME
36A0	13984	N-MOD-M	3ABB	15035	INTDIV
36AF	13999	INT	3ACA	15050	INT
36C4	14020	EXP	3ADF	15071	EXP
3713	14099	LN	3B2E	15150	LN
3783	14211	GET-ARGT	3B9E	15262	ANGLE
37AA	14250	COS	3BC5	15301	COS
37B5	14261	SIN	3BD0	15312	SIN
37DA	14298	TAN	3BF5	15349	TAN
37E2	14306	ATN	3BFD	15357	ATN
3833	14387	ASN	3C4E	15438	ASN
3843	14403	ACS	3C5E	15454	ACS
384A	14410	SQR	3C65	15461	ROOT
3851	14417	TO-POWER	3C6C	15468	TO_THE

SPARE LOCATIONS (FILLED WITH FF)

386E 14446
.
.
3CFF 15615

CHARACTER SET

3D00 15616 (Char Dot Ptrns 3D00 15616 CH_SET

* The Timex 2068 Technical manual lists:

TSNAME HEX
DELSYM 0B7E
NEW 0D82
LDMES 3CAB

H.E. Weppler (Sep 85 CATS Newsletter) lists:

TSNAME	HEX	SPNAME	HEX
DELSYM	0B7E	(ED-DELETE)	1016
NEW	0D82	(RAM-SET)	1219
INPUT	222B	(INPUT)	208E
CALC	3684	(? STK-ZERO)	3254
LDMES	3CAB	(Program: Msg)	09C1

N.A. Pashtoon (May/June 88 SINCUS NEWS) lists:

TSNAME	HEX	SPNAME	HEX
DEL_K	0BFE	(CLEAR-SP)	1097
LDMES	3CAB	(Program: Msg)	(09C1)
LINENO	1768	(E-LINE-NO)	19BF
PAUSE	1FEF	(PAUSE)	1F3A
READ	1D96	(READ-3)	1DEC

Con't from page 4

23	INC HL
228240	LD (ADDR), HL
3E76	LD A, 76 ; N/L
D7	RST 10 ; Print Line Feed
18D6	JR 0-PRINT

42 bytes

(16651) 410B NEXT BYTE

137 Bytes Total

Con't Page 2

300 baud, due to be upgraded to 1200, at (613)745-8838. Operating 24 hours everyday. If you are not a member log on with the name Special Guest, and use the password "CLIVE"(no quote marks please-but use all caps).

Locally our Hambone BBS is back up after a 30meg hardrive crash - this BBS allows user access the first time. Howard the sysop is going for hamusers and the software allows 64 users at on time to access the board. See last page for BBS info. If you wish to leave a message for us at SINCUS, go J 8, "section eight" for TSers!

I also am on Nitewing BBS at least once a week, 3/12/24/9600 baud, 8-N-1, once on, wait until the machine boots up, sometimes 10-20 seconds. Call 24 hours at (607)687-3470. Leave a message under local area. If you get on any of these BBSs, you will see my ranting at the Compuserve charges!

CON'T Time Designs- dated late July 1989, Tim has not had the time for the magazine, his wife is no longer helping him with the mag, a mountain of unanswered mail and worst case scenario, his address data base has been corrupted. He is answering the mail starting with the oldest date, he is rebuilding his data file, and he is working on the next issue (5-2). He plans to be around for quite awhile. (Comment - back up them files, do I do that myself?? no, it is too much like work) -UPDATE- from the PLOTTER, (November 1989) Tim says issue 5-2 is in the mail, and 5-3 isnt far behind. Tim has a BBS up and running on his business phone (503)824-2658 at 300 baud, settings 8/N/1. If you haven't received issues paid for, leave your name and address on the BBS.

The Capital District Timex Sinclair Computer Club, Jack Barone, 141 Ontario St., Albany, NY 12206 just contacted us and we are beginning a newsletter swap with them. They are 5 years old and have computers from the TS1000 to the QL. Maybe someday (after the winter snows) we can meet with them.

News from The PLOTTER, WMJ Data Systems has sold out it's stock to RMG. RMG is also selling the Novelssoft line. Rod has his catalog on 2 5.25" on LKDOS and he used Tasword to write it. \$3.00 pp per cat, and monthly flyers at \$12 a year. Rebates towards purchases.

WANTED: A good woman who can cook, sew and clean. Must be able to communicate with hard core computer nut/hacker/nerd/user/freak (choose one) in various languages, Basic, Fortran or APL. Must have good paying job or large savings account. Prefer woman who has own personal computer and hard disc. Please send photo of computer.

SINCLAIR COMPUTER USERS SOCIETY

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Vice President.....Dave Schoenwetter	+ Ad size is limited to 32 characters by
Treasurer.....George Penney	+ 22 lines. Additional ads for members at
Secretary.....Paul Hill	+ \$2 per ad, non-member ad cost \$3
Trustee.....Carl Morris	+ Subscription rate: \$8 per year- six
Trustee.....Don Lamem	+ issues per year. Should SINCUS NEWS be
Swap Controller.....John Colonna	+ discontinued, all accounts owed monies
Book Library..... OPEN	+ will be refunded.
Tape Library.....Don Lamem, Hal Sohn	
Editor.....Paul Hill	
Tel: (607)798-7219 evenings til 9 pm.	

SINCUS will leave messages on HAM-BONE BBS-(607)754-7498 "J-8" 8-N-1 24hrs 3-1200B

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Thanks to Ray Byler and Don Lamem for their help with the input to this edition.

Hello and welcome back, to Phil McConaghey, Pembroke Pines, FL and thanks to Robert Curnutt, Adelphi, MD, for RENEWING his subscription to SINCUS NEWS.

In the Sept. 89 issue of the "PLOTTER", several pages are devoted to the TSEN- the Timex Sinclair Electronic Newsletter by Greg Popovich, New Jersey 201-956-7703 (BBS 8-1-N); 201-956-1556 (voice) FidoNet 1:107/564. First issue of TSEN was launched Feb 10, 1989. It is available on the Timex echo on FidoNet Backbone. Leave your node ID. Also available on W.Y.S.I.W.Y.G RBBS for DLing. Size to be under 25K. INPUT also needed.

SINCUS DISC/tape SWAPS for the TS2068 are still growing- five discs available and the sixth under construction. Available in Dliger or Larken Formats ONLY in 40 track, 5.25" discs. Get all five for \$10.00, or \$2.50 per disc for orders less than 5 discs. Special deal- one swap disc for \$1.00 and three Public Domain programs (YOURS or outa a magazine and give credit where due- send for list of our programs, dupilcates don't count). Send for disc catalogs, enclose an SASE. Send for a Sample disc and catalog enclose \$2.00. For Dliger swaps write John Colonna, 28 Guilfoyle Ave., Binghamton, NY 13903. For LKDOS (DDDS only) swaps write to Paul Hill, 1229 Rhodes Rd., Johnson City, NY 13790. Make checks payable to SINCUS.

CLONE- a TS2068 tape copier (2 modes) and a header reader. On other side of tape are a couple swap samples. (TAPE ONLY) \$5. PPD.

COMPUTUS INTERRUPTUS- a multipart article on the 2068, includes programs, projects and artwork. Printed out, over 60 pages. One printed copy left only \$15 each. Also available on LKDOS and Dliger discs - 5.25 DSDD only \$5. Make checks to SINCUS, write to Paul Hill, 1229 Rhodes Rd., Johnson City, NY 13790.

Enjoy the upcoming holidays and here's another log on the fire and an idea for a program. There aren't too many disc driven programs for the 2068, let's get going.